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ABSTRACT

An overview of the competency-based teacher education (CBTE) program at the University of Houston is provided through a "walking tour" of its facilities and a presentation of the program rationale and design. Part 1 presents sketches of brief scenes in the college of education and an elementary school where students complete their field experiences. Part 2 consists of the rationale and design of the program, which is based on five assumptions, namely, that (a) the teacher is a liberally educated person with a broad background in his teaching field; (b) the teacher reflects in his actions that he is a student of human behavior; (c) the teacher makes decisions on a rational basis; (d) the teacher employs a wide variety of appropriate communication and instructional strategies; and (e) the teacher exhibits behavior that reflects professionalism. The 16 major areas of competency generated from these assumptions are described. The CBTE program at Houston is wrestling with the problem of evaluating attainment of competency, but it is indicated that assessment does occur in the normal course of instruction. (HMD)

THREE VIEWS OF COMPETENCY-BASED TEACHER EDUCATION: II UNIVERSITY OF HOUSTON

W. Robert Houston and
Howard L. Jones

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W. ROBERT HOUSTON

HOWARD L. JONES

W. Robert Houston is associate dean of the College of Education, University of Houston, where he has been primarily responsible for developing a CBTE program since 1970. He is also director of the Professional Development Center and senior author of the Houston Needs Assessment System, both of which provide statewide assistance.

Dr. Houston has consulted widely in the fields of CBE and elementary mathematics education. He is a member of the Coordinating Committee of the National Commission on PBE and the board of directors of the National Consortium of CBE Centers. He has authored twenty-three books and thirty-five journal articles and chapters.

Howard L. Jones is professor of curriculum and instruction at the University of Houston, where he has served as director of undergraduate competency-based education. He has consulted widely in the areas of science education and CBTE and presently serves as a member of the ASCD National Committee on Competency-Based Teacher Education.

Dr. Jones' writings include a chapter on program implementation in the SRA publication, *Competency-Based Teacher Education*, and a forthcoming book with Gene Hall, *Competency-Based Education: A Process for the Improvement of Education.*

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By W. Robert Houston and Howard L. Jones

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ASSUMPTIONS

Competency-based education has attracted more attention, more advocates, and more antagonists than any other recent movement in education. Within its short history, 17 states have proposed CBE as an alternative means to certify teachers, 131 universities operate CBE programs, federal projects mandate it, AAUP damns it, researchers decry its lack of supporting evidence, and proponents employ it as a way to collect such evidence.

The basic assumptions of CBE are difficult to refute. All professional schools would like to prepare competent professionals. CBE postulates that certification will be granted only when competence is demonstrated by the prospective professional.

The concepts underlying CBE are relatively straightforward. Competency statements are derived from the role of the practicing professional, explicitly stating what the learner is to demonstrate for successful completion of the program, and made public in advance of instruction. While such competencies may include *cognitive* objectives (what the prospective professional knows), the primary emphasis is on *performance* (what the prospective professional can do), and *consequence* objectives (what the effect of the prospective professional is on his clients). It seems more important that professionals be able to practice their art, and to bring about positive change in clients, than simply to *know* about professional actions. Within a CBE program, learner progress is contingent upon demonstrating competencies. Assessment and instruction are derived from and linked to competencies.

Thus, the total program is designed around statements of competencies—competencies assumed to be integral to the role of a professional.

CBE is primarily an *approach* to instruction; the value of a specific CBE program depends largely on its competencies. Some institutions have made extensive literature searches, worked with practicing professionals, developed theoretical constructs, and finally designed an integrated program. Others have simply rewritten goals and activities for each of their courses into behavioral objective formats, and called themselves CBE. Some programs have carefully edited their objectives and continued to improve assessment systems; others are not so much concerned with continual revision and improvement. Some are committed to innovations; others to traditional approaches. Yet all claim to be competency-based!

While there may be some variance in the definition of CBE itself, the distinguishing feature of most CBE programs is the way in which designers identified competencies, the innovativeness of their approach, the congruence between program requirements and the needs of beginning teachers, and the usefulness of instruction and assessment procedures.

This fastback describes one CBTE program, its underlying rationale, program design, and implementation procedures. It is not presented as an exemplar for other programs, but simply as a description of how one group went about the task of improving teacher education.

Perhaps the most effective way to grasp the program is to tour the College of Education, University of Houston, and then go to a nearby elementary school. We'll talk with some of the people as we go; we want you to *feel* the program as well as to be able to describe it. But let's follow CBE principles and make our objective clear and public. After reading the following tour you will be able to describe several of the activities in the CBE program and discuss the rationale for their inclusion.

CBE in Action: The Top of an Iceberg

Before we start our tour of the college, some background information will put the visit in perspective. The College of Education building was completed in 1971—open in design with large spaces, movable walls and furniture, wide glass areas; designed to

model innovative school plants and to reflect a new style of teacher education. The university with its 26,000 students and situated in the inner city of Houston, affirmed the importance of teacher education by locating the College of Education on the central mall of the campus. The modern facility and tree-shaded campus contrast vividly with the deteriorating homes which surround it. The mission of the college is not only to innovate and study teacher education, but to deliver viable programs for teachers in inner-city schools.

We will begin by taking an elevator to the fourth floor. Room 416 is a seminar-sized room, like a dozen others, to accommodate 12 to 20 people. These rooms provide for vital interaction, an opportunity for people to express themselves, to explore ideas, to probe attitudes and feelings.

Today, Don Edwards is interpreting the results of several tests for 15 prospective physical education teachers. Several weeks ago they completed a battery of tests which included the Edwards Personal Preference Schedule, Minnesota Teacher Aptitude Inventory, Rokeach Dogmatism Scale, Work Motivation Index, and the Vocational Preference Index. These tests were machine scored; norms drawn for the 600 students in the beginning phase of the program; and now Dr. Edwards, member of the Counselor Education Department, discusses results with students. Each student examines his own test results as Edwards describes what various scores may mean, interprets profiles, answers questions, and leads a lively discussion. Individuals may confer privately with him about personal concerns.

As the session ends, we stop Chris and Ginger, asking them how this fits into their CBTE program. "We are just beginning," they tell us. "This initial part of our first set of experiences is called 'Career Decision Experiences.' Within a few weeks we are expected to decide whether or not teaching is for us, and what age and kind of children we feel we can work with best. Now we are gathering information and ideas to make those decisions." "Can you describe some of the Career Decision Experiences?"

"We are visiting and working in three school settings during a six-week period—the two of us plus Marshall and Ron visited Red Elementary School, Ryan Middle School, and Sharpstown

High School. We had specific questions to ask and observations to make in each. Basically, we wanted to know what teachers did, what students were like, and what the school was like. Although we have been out of high school only two years, we were surprised at how little we really knew about schools. My seminar leader calls this our 'reality training.'

"We also completed an Employment Module which included information on job availability, salary and benefits, and problems faced by beginning teachers—information which might help us decide about teaching. Then there was a Multicultural Module which introduced us to varying values in schools, and helped us understand our school observations. We will continue this study throughout the program, so this is just the initial dose!

"The 15 people you saw today meet weekly in a seminar as part of Career Decision Experiences. This provides us with an opportunity to discuss what we have seen and to determine what we need to focus observations on in our school next week."

As Chris and Ginger leave, we might point out that, as a result of these experiences, about 10 percent of our students will decide not to teach and another 10 percent will change from secondary to elementary education.

On the third floor we see an open-area Learning Resources Center. Open stacks include slides and audio tapes, reels of television tapes, programmed materials, and other instructional materials neatly boxed, labeled, and numbered. Casually spaced around the center are about 40 individual carrels, while hexagonal tables provide for small-group activities.

In one carrel, a young man intently watches a slide/tape on Goals and Objectives. He too is in the beginning phase of this program and is expected to demonstrate that he can write instructional objectives. He has chosen slide/tape instruction in lieu of a written presentation, programmed text, or a class lecture. The method of instruction in CBE is not so important as his being able to write objectives with technical skill. He decided which activity to pursue as part of a module on "Instructional Objectives" which includes a prospectus, objectives, listing of alternative instructional activities, and a sample assessment. To demonstrate competence with the objectives he must meet standards in a cognitive test on writing objectives.

In later parts of the program, he will apply this technical skill of objective writing as he plans lessons to teach. In addition, he will learn to evaluate the *worth* of objectives written for students he is teaching. The competency for which he will ultimately be held responsible to be certified is: "2.0—Identifies and/or specifies instructional goals and objectives which are based on learner needs." Thus, these objectives and their attending activities are part of a whole host of objectives leading toward a broad and important teaching competency.

In another carrel, two students wearing earphones watch a 5-minute film in which the teaching tactic, Stimulus Variation, is modeled. This is part of a series of modules which introduce teaching skills (set induction, higher order questions, positive reinforcement, nonverbal behavior, and cognitive closure). Each module includes written materials and a film modeling the skill. Early in the program, students use these skills in micro-teaching situations. The emphasis is on doing, not just learning about teaching.

At one of the tables in the Learning Resources Center, four students are reading and planning for a series of pupil interviews using Piaget techniques. They will read parts of Piaget's books, read summaries of his theory, study an article on interviewing children, watch a video-tape of a faculty member interviewing children, and discuss what they did. Many of these activities have already been completed. Today as we observe them, they are filling out a planning sheet for "Conducting Piaget Studies." They are planning for their interviews with children by identifying where they can obtain needed equipment. Each will interview five children, then all will share their data and conclusions, comparing their results with those of Piaget. They will also listen to tapes of their interviews, critique procedures, and make suggestions for more effective interviews in the future. The outcomes of these activities include not only the ability to describe Piaget methods and concepts, but the ability to use his methods with children. Later, when they work in mathematics and science, these concepts will become more specific and subject-related.

In one corner of the center, Professor John Bishop and a student review a video replay of a micro-teaching lesson. They are

particularly concerned with inquiry and the extent to which the student has been able to draw middle school youngsters into an inquiry-oriented social studies lesson. The appropriateness of motivational activities, use of probing questions, and the extent to which pupils analyze and speculate on the issue are the focus of the lesson assessment.

As Dr. Bishop finishes, we ask him about the function of the feedback sessions. He answers, "Two of our concerns are continuity of experiences and of training. This student is a senior; she is ready for her last set of experiences before internship or student teaching. This session today was a preparatory session designed to determine if she could use in an integrated way the teaching skills she had demonstrated in previous phases. While students may begin by focusing on one skill or area of professional competency, we continually press for integration within a context. If you want to see how they start acquiring these individual skills why not talk with Sam Miller over there. He's working with some beginning students now."

In a small room nearby, four students and their instructor, Dr. Miller, a music educator, are viewing a peer taught lesson. Each of the four has taught a lesson and now they are collaborating in the critique session. Elizabeth is watching a taped lesson for instances of reinforcement, John for set induction and closure, Kelly for stimulus variation, and Renda for higher order questions. Following the taped replay each will share his data with Kelly, who taught the lesson, then the group will analyze the data and draw conclusions related to competency demonstration. By collecting and analyzing data on self and others, students become more sensitive to what they are doing, and why. More importantly, they begin to work together as a team.

In walking down the glassed staircase to the second floor, one looks down on several classes being conducted in the huge open area. In one, James Anderson is lecturing to a group of students on Afro-American culture. Jay Shores demonstrates the use of systems theory in planning a lesson nearby; other students independently work with Cuisenaire rods in a mathematics laboratory.

These open classrooms reflect the character of the building and program. Teaching is open; occasionally a person stops to

listen to a particularly interesting discussion, then moves on. Open classes in the college reflect that same openness found in many new schools in this country. One College of Education goal, "exemplify what you expedite" formalizes the old adage, "practice what you preach." So practicing openness and modern methods becomes part of the program—and a way of life.

Communication between students and faculty and among students in an individualized program poses a problem. Often there is no regularly scheduled meeting for such a purpose. On the second floor at the foot of the staircase is a set of student-faculty mail boxes. Messages can be left and picked up; papers returned; modules and materials passed along.

On the first floor, in a large round auditorium called the Kiva, students are listening to a lecture on psychological development of children. This is one of the optional activities for objectives in the Psychological Foundations modules. Small counseling rooms also are located on the first floor, connected by one-way glass in such a way that graduate students in counselor education can observe instructors working with students. In one room Bob Ward, professor of counselor education, is providing Personal Assessment Feedback to a student. This service is provided to students in the second phase of the program, and builds upon the results of tests administered early in the program. These feedback sessions, however, are always with individuals. The system was designed at the R&D Center for Teacher Education at The University of Texas. Parenthetically, when graduates of our first experimental CBTE group evaluated their program, the PAF was judged as one of their most valuable personal and professional experiences.

CBE, because of its performance base, requires field settings where students observe, act as teacher aides, tutor, and intern. Some things are better studied at the college, others in the school and community. The Houston Teacher Center includes 20 school districts and a large number of schools, but today we will restrict our visit to MacGregor Elementary School, a predominately black school just a mile from the university, where we can view the full range of school-oriented activities.

During the week, prospective teachers come to MacGregor on a prearranged schedule to observe, collect data, work as aides,

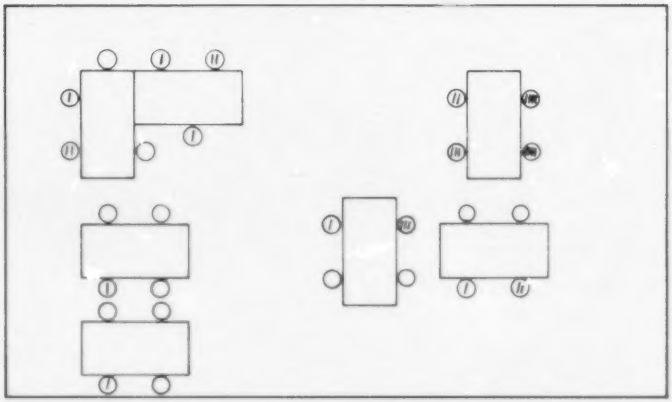
intern. But on this day, Robert Underhill with two doctoral students and three classroom teachers is supervising 60 prospective elementary teachers as they work with nearly 100 children. Each prospective teacher is tutoring one or two pupils in mathematics. He will demonstrate that he can diagnose each pupil's mathematics progress, design lessons to improve achievement, and demonstrate in the post-assessment that the pupil has made progress toward specified goals.

Since learning is an individual endeavor, prospective teachers should spend much time with individual pupils. Working with classes of 25 tends to blur individuality for many beginners. Cues from the faster learners leave the erroneous impression that all have learned. One-to-one contact and tutoring strengthens teaching effectiveness by sensitizing the prospective teacher to individual characteristics of students, and their reaction to his teaching actions.

In the third grade, an intern teaches the class while her teacher and a university supervisor observe. The intern has previously demonstrated competencies in micro-teaching and tutorial settings; now she is integrating them into a style which is uniquely her own. Being able to ask higher order questions or use positive reinforcement or diagnose a pupil's mathematical achievement is not adequate; these must be integrated and thoughtfully used in a smooth teaching style which Bruce Joyce refers to as a "seamless web" of actions.

The university supervisor is using a style of clinical supervision developed by two University of Houston faculty members, James Cooper and Audry Graves. Prior to instruction, the prospective teacher discusses her plans and contingency plans with the supervisor; then they jointly determine which of the intern competencies the supervisor will collect data on. Following the lesson, feedback is based on *data* rather than conclusions about performance. Let's listen in to part of one such conference.

Supervisor: "One of your objectives was to stimulate class discussion so that at least half the students participated verbally, and all appeared to be interested. To determine the extent to which this objective was met, I drew a diagram of your class and marked a tally for each student as he participated. Let's look at this chart."



Intern: "Well, I did get more than half of the students involved, but it's obvious that most of the conversation came from one table. And that back corner just did not seem to say anything."

Supervisor: "Students talked 30 separate times, and 14 came from one table. How did you feel about that?"

Intern: "I knew they were talking more than anyone else—it seemed that everytime someone in the class said something, they had an idea to express; but I did not think they talked that much."

Supervisor: "Did your location in the room have anything to do with it?"

Intern: "Well, I did stand next to that table; at the time it seemed the natural thing to do."

Supervisor: "You attempted on several occasions to bring in pupils in the back."

Intern: "Yes, but they just didn't respond. Perhaps if I had changed my position at that time it might have helped. Also I might have asked a question and looked at them to encourage them to respond."

Supervisor: "Those are good ideas. I also recorded the types of questions you asked and the replies pupils gave. You asked twelve questions. . . ."

And so it goes; the supervisor provides data upon which joint assessment can be made and improvements contemplated. This process was initiated in Phase I and continues throughout the program. It is the result of one of the five propositions upon which the program was designed.

The glimpse of the program in this section, of course, is not complete. Hopefully it does provide a flavor for the total program. In the next sections, more of the effort can be viewed from a theoretical and historical view.

THE CBE DESIGN: UNSEEN PART OF THE ICEBERG

Need for Design

Most preparation programs in teacher education are characterized by their lack of unified, cohesive, directed efforts. There is a distinct lack of interrelatedness as many individual faculty in several departments each go their separate ways. The mottled patchwork called a curriculum often is a jumble of contradictions, feats, old wives tales, unexplained and undefined theories, and little translation of theory into viable practice. Even that practice cannot be used to improve the student or the program.

Consequently, much of the teaching done by graduates of these programs relies on intuition, with the more perceptive teachers being more effective, not because of the training program but almost in spite of it. Reliance only on the intuitive person suggests that there is no distinct discipline of teacher education, and never could be. The program at the University of Houston is predicated on the belief that this is not the case. Five propositions regarding the role of the teacher were specified early in program design, and form the basis for subsequent delineation of competencies and objectives, development of instructional materials, and design of evaluation procedures.

Five Propositions

1. *The teacher is a liberally educated person with a broad background in his teaching field.* This proposition emphasizes the responsibility of general education and major fields of study in the arts and sciences to provide a rich basis for teaching. Actually, only a small portion of a prospective teacher's professional preparation occurs in the College of Education (of 122 credits, 43 for elementary and 18 for secondary are in education). While recognizing the importance of academic preparation, it is

this professional program which is competency-based and which is described here.

2. *The teacher reflects in his actions that he is a student of human behavior.* Teaching is an applied behavioral science: knowledge alone is not sufficient. Teachers should demonstrate the full range of competencies derived from psychology, multicultural education, socio-linguistics, sociology, philosophy, and anthropology. Further, such understandings are translated into actions which reflect a realistic understanding of self and others.

The program includes a number of objectives related to this proposition. The testing program briefly described above for early portions of the program is designed to help prospective teachers better understand themselves, their values and motivations, and their relationships with others. This self-understanding is basic for teachers who may be helping students better understand themselves. A series of optional affective modules permit prospective teachers to explore competencies related to Sharing Self with Others; Communication; Listening and Responding; Awareness of Self in Relation to Others; Communication: One-way and Two-way; Professional Ethics; and Group Process. Members of the counselor education faculty are available when students request personal assistance; this support staff has been invaluable in personalizing the program.

In a major part of the program, students choose competencies from a wide range of the behavioral sciences; studying about Piaget and other learning theorists, sociological principles and trends, influences of multicultural education, and the evolving city in America. The emphasis is on developing skills and using them, and applying knowledge of the behavioral sciences in classroom practice.

These two program aspects—self-understanding and formal study of the behavioral sciences—support program elements derived from the premise that teachers who better understand themselves and others are likely to be more effective teachers.

3. *The teacher makes decisions on a rational basis.* The rational approach to decision making, and its attending paradigm, permeates the training program so that the prospective teacher can analyze important functions of his roles and the consequences of action.

The actions of the professional constitute an interrelationship between theoretical considerations and behavioral manifestations. The process includes four stages. (1) Goals and objectives are delineated and based on perceived needs. (2) Strategies for achieving these goals and objectives are planned. (3) Plans for achieving goals and objectives are implemented. (4) The extent to which goals or objectives are achieved is evaluated.

Some notes about this model are in order. First, it can be applied to any professional action, whether it is teaching, self-development, or organizing for management. Each requires goal setting, planning, acting, and evaluating. Second, the cycle sometimes is completed quite rapidly while on other occasions it may require weeks or months; it is not time-bound. Third, evaluation leads back to goal and objective setting—speculating on whether objectives are to be changed, or implementation strategies, or both.

This rational approach is predicated on the belief that when professionals systematically analyze important functions of their roles and evaluate the consequences of their actions, they are more likely to be effective. Within the program, students are exposed to the rational approach to lesson planning where they diagnose learner needs, set objectives, plan to achieve objectives, teach, and evaluate results of teaching on the basis of objectives achieved. This process is embedded early in the program in the micro-teaching lessons and later during internship with classes of pupils. The process is integral to clinical supervision; it is emphasized by counselors; it forms the basis for advisor discussions with students about which competencies are to be demonstrated.

4. *The teacher employs a wide variety of appropriate communication and instructional strategies.* This proposition is drawn from the premise that teachers who have a wider repertoire of skills and techniques of instruction, management, and communication are more likely to be effective. At one point in the program, teaching tactics such as questioning skills, set induction, and positive reinforcement are studied and demonstrated in micro-teaching settings. Later, they are expected to be embedded in more complex instructional procedures.

Some students learn to code and interpret the coding of their

classroom interaction, using schedules such as those by Ned Flanders, Gene Hall, Chuck Galloway, or Irv Miller. All use a variety of data collection systems to describe teacher and student actions.

5. *The teacher exhibits behavior which reflects professionalism.* This includes the ability to work closely with other persons in solving problems as well as continual self-assessment. Again, the rational model is applied so that effectiveness can be increased in an ever-changing social context.

Competencies

The five propositions which are described on the last section led to the generation of a set of competencies which are noted below. For each of the competencies there is a descriptive statement providing the reader with some indication of the area of focus for each of the competencies. Not included in the list are the many sub-competencies which are demonstrated by students during the various parts of the program. The prospective teacher:

1. *Diagnoses the learner's emotional, social, physical, and intellectual needs.* Draws upon knowledge of human growth and development, learning theories, social/cultural foundations, assessment techniques, curriculum goals and content to gather information about the learner and to identify instructional needs.

2. *Identifies and/or specifies instructional goals and objectives based on learner needs.* Views the setting of instructional goals and objectives as a key element in the diagnostic/prescriptive model of instruction; reconciles curricular/educational goals with present level of learner needs; analyzes instructional goals to identify knowledge, skills, attitudes needed to achieve those goals; states objectives so that intent is communicated to learner.

3. *Designs instruction appropriate to goals and objectives.* Develops strategies for promoting achievement of instructional goals and objectives in which learner needs and instructional options are incorporated.

4. *Implements instruction that is consistent with plan.* Designs strategies which have the potential to promote learner achievement of particular goals and objectives.

5. *Designs and implements evaluation procedures which focus on learner achievement and instructional effectiveness.* Constructs and operationalizes evaluation procedures which focus on a variety of goals and objectives; reports learner achievement through grades, consultations, checklists, and the like; evaluates instructional effectiveness by comparing learner achievement with that expected after given instructional experiences.

6. *Integrates into instruction the cultural backgrounds of students.* Incorporates materials, examples, illustrations, verbal and nonverbal communication patterns, motivators and reinforcers from learner's background—race, language, sex roles, socioeconomic level, nationality, etc.—so that learner is able to identify with content, processes, and intended outcomes of instruction.

7. *Demonstrates a repertoire of instructional models and teaching skills appropriate to specified objectives and to particular learners.* Describes and demonstrates a variety of instructional models. Uses appropriate models of instruction based upon the subject, objectives, and needs of learners.

8. *Promotes effective patterns of classroom communication.* Recognizes the value of effective communication; accepts and supports ideas of others; strives for more productive communications; and encourages interaction among all members of the group.

9. *Uses resources appropriate to instructional objectives.* Operates audiovisual equipment, makes instructional materials appropriate to objects, and identifies sources of instructional materials. Individualizes resources in classroom and uses community facilities for instructional purposes.

10. *Monitors processes and outcomes during instruction and modifies instruction on basis of feedback.* Demonstrates sensitivity to classroom indicators which allows for making on-line decisions regarding success of instructional processes and learner achievement.

11. *Demonstrates an adequate knowledge of the subject matter which she/he is preparing to teach.* Demonstrates a broad background as a liberally educated person, and an in-depth knowledge of the fields of study in teaching major. Describes content, placement, and sequence of subject matter being taught to learners.

12. *Uses organizational and management skills to facilitate and maintain social, emotional, physical, and intellectual growth of learners.* Establishes a management system that facilitates individual achievement and personal growth; organizes and facilitates productive group interaction; and establishes positive socioemotional relationships with learners. Creates and maintains a supportive physical and socioemotional climate which promotes productive group interaction and provides for individual needs of learners.

13. *Identifies and reacts with sensitivity to the needs and feelings of self and others.* Demonstrates a concern for the needs of learners; recognizes that as a member of a learning group, the teacher has needs which must be met in a teaching-learning situation; and reacts to meet the needs of both learners and self.

14. *Exhibits openness and flexibility in making rational decisions.* Searches continually for ways to improve instructional effectiveness. Listens critically to ideas of others; bases decisions upon best available data.

15. *Works effectively as a member of a professional team.* Works with other professionals, paraprofessionals, and laypersons in order to achieve commonly shared goals; displays behaviors consistent with the goals and ethics of the teaching profession.

16. *Analyzes professional effectiveness and continually strives to increase effectiveness.* Uses a variety of observational and analytic procedures to study teaching effectiveness; examines the consequences of teaching by focusing on learner objectives and instructional outcomes.

As the reader glances through the competencies described above the question must come to mind: "Isn't this what all teacher education efforts are designed to focus on? Don't all effective teachers perform these global goals?" The answer, of course, is yes and effective teachers demonstrate these competencies in their own unique ways.

CBTE proponents, however, hold prospective teachers accountable for demonstrating minimal competence prior to certification. To more fully explore this area, the reader must explore the decision-making process in CBTE. In most experience-based teacher education efforts, the assumption is that the more ex-

periences and more varied experiences a prospective teacher has, the better prepared he will be for teaching. The key instructor decision is: what things can I have the student do in this course? In competency-based efforts the decision is a different one. The decision becomes: what competencies do I expect of the teacher? Toward this end, CBTE proponents note an important principle—prospective teachers are held accountable for the *demonstration* of competencies, not for the *acquisition* of competencies. In other words, the student is expected to demonstrate competence; and how he achieves this competence is up to him. The instructor's role is facilitation—helping students identify means to achieve or increase competencies.

Assessment of the Achilles Heel

A question often asked by visitors to the CBE program is "How do you evaluate the effectiveness of students in achieving these competencies?" And our response is, "Not very well!"

The assessment problem is one of the knottiest puzzles faced by anyone attempting to assess human behavior, and particularly as assessment relates to the complex intellectual tasks and skills and attitudes of teaching. In the first place, we are not certain that these particular competencies are the precise competencies teachers should demonstrate. Thus throughout the program development we have treated them as untested hypotheses while studying these competencies as they relate to teaching in different school settings. Second, for each competency, the critical level below which an individual is not successful, or a level above which it does not seem to affect teaching effectiveness, have not been established. Research in the behavioral sciences, and particularly in teacher education, has been extensive, yet powerfully integrated studies rigorously applied have not demonstrated strong relationships between specific teacher competencies and student outcomes. This lack of relationship seems to apply equally to knowledge of content and instructional strategies. Thus, it has been difficult for us to identify competencies and to specify levels which would be acceptable for beginning practitioners.

The process is further complicated by our lack of sophistication in assessment. While assessment of cognitive knowledge

has progressed considerably during the past two decades, the assessment of teacher performance remains crude. These most troublesome problems confou[illegible] any professional preparation program, and become acute in CBE because of their central and crucial nature. It is important that the reader recognize these caveats and our own concerns as he speculates with us on how competencies are evaluated in the program.

To provide some indication of how assessment is accomplished, however, consider the following excerpt describing how one student focused on her own professional growth:

> Gladys knew that one of the key skills she needed to work on for first-level certification as an elementary teacher was questioning. When she thought back to her days in public school she was amazed at how her teachers could ask questions. She even remembered that some teachers seemed to ask questions that called only for memory responses, while others could really zing students with thought-provoking questions.
>
> Her instructor had given her a three-fold prescription on questioning during her last video-tape analysis:
>
> 1. Work on asking higher order questions.
> 2. Work on asking probing questions.
> 3. Practice "wait time."
>
> She could see from watching her video-tape with her instructor that her questioning skills left much to be desired. She had worked on it, even making cards with questions noted on them in advance, but her lack of skill was still evident. She wondered how those teachers whom she remembered had been able to think of such questions on the spur of the moment.
>
> Gladys had already tested out of a module on identifying higher order questions. She knew all about categorizing questions according to Sanders' and Bloom's taxonomies. That wasn't hard at all, not nearly so hard as asking those kinds of questions in a classroom.
>
> Three modules that focused on the elements of her prescription were available in the bookstore, so she bought them and set to work. Each module was pretty much the same in style. Each began with a list of objectives, then had a prospectus telling why the skills were important (she already knew why they were important!). They then included written descriptions of classroom incidents where teachers used the skills. Gladys could choose to view elementary or secondary classroom incidents, which showed teachers using these skills. Some practice exercises followed, and then there were instructions on how to complete the module by demonstrating the skill herself. In each case, Gladys was to submit a teaching vignette on video-tape that showed her using the skill.

She knew from past experience that she would not only have to demonstrate the skill but that she also must be able to identify when she employed the skill and why in the presence of her instructor while viewing the tape.

Gladys considered how strange she had found the testing procedure to be in her competency-based teacher education program. In other college courses she was expected to perform most of the time on written tests. In this program the instructors expected to see her teach, using the skills she was supposed to be learning. When she entered the program she was given a blank video-tape that one instructor had called a "circular blue book." She had more one-to-one contact with her instructors than she had ever experienced before with teachers. Just one video-tape viewing session took 45 minutes. It was no wonder the instructors had designed supporting modules that called for a minimum of instructor input.

Gladys also thought back to her concern that since the objectives were all written down and the same for everyone that she would have to teach like everyone else. She found that when she taught, however, she was unique and that her instructors did not try to make her teach like everyone else. In fact, her counselor kept insisting that she incorporate her own unique teaching style. The individual skills she acquired then became part of her own repertoire. Right now she knew she could lecture because feedback from her pupils on taped lessons had been excellent, but she didn't like to lecture, so she rarely did. She liked the school experiences, since they gave her opportunities to practice with live kids. . . .*

*excerpted from Hall, Gene and Jones, Howard *Competency-Based Education: A Process for the Improvement of Education.* Prentice-Hall (In press) Used with permission of the authors.

One very obvious fact emerges from Gladys' description: she will never reach the point where she cannot improve. This leads us to a second key area of decision making in the CBTE models—the definition of a program. While most experienced-based teacher education efforts consist of courses, there is little coordination of efforts among courses. A truism in most professional schools is that the prerequisites placed in the catalog rarely mean anything. Most CBTE program developers, however, look at the program as a coordinated and highly interrelated sequence, a sequence which provides students with the opportunity for constant growth throughout their careers.

One other very obvious fact is that the competencies listed on pages 20-22 are never fully accomplished. Even the most highly proficient teacher cannot claim to be perfect. CBTE efforts pro-

vide a preservice-inservice continuum which focuses on continued growth for teachers. For example, Gladys, in her search for questioning skills, was focusing on one small part of Competency 5: DEMONSTRATING A REPERTOIRE OF INSTRUCTIONAL MODELS AND TEACHING SKILLS APPROPRIATE TO SPECIFIC OBJECTIVES. Other instructional materials are designed to push Gladys to use her gained questioning skills in demonstrating inductive teaching models, advance organizer models, etc.

As a key part in the instructional decision making, CBTE program builders must identify what indicators they will accept as evidence of minimal competence prior to certification. These indicators are then specified for students—Gladys knew that she had to demonstrate questioning skills prior to certification.

Program Sequence

The list of competencies on pages 20-22 provides a logical cohesion; it does not, however, suggest the order in which subcompetencies or objectives are most effectively learned. The Houston program relied heavily for this sequencing on the rationale and supporting research of the concerns model developed by Frances Fuller of the R&D Center for Teacher Education at The University of Texas at Austin. Fuller postulates that the prospective teacher goes through a describable series of concerns. In the beginning, he typically is concerned with himself; he raises questions such as "How adequate am I?" and "Where do I stand?" He seldom asks "Where do I stand as a teacher?", "Are my pupils learning what I'm teaching?", or "How can I improve myself as a teacher?" These latter questions are asked only after teaching and other experiences with students.

While there is flexibility in student scheduling, experiences generated for students in the program were typically sequenced using the concerns model. Beginning students, most of whom were at early concerns, visited in public schools where they focused on getting to know the school and seeing the school operation from the other side of the teacher's desk. On campus, they interacted through affective modules designed to help them consider why they were in teacher education. In addition, begin-

ning teaching skill modules introduced them to tactics for instruction. Peer teaching sessions with video-taping were followed by feedback sessions with an instructor and/or peers. The psychological testing sessions described earlier were also held during this period. All of these experiences were designed to push students into a concern about teaching tasks and pupil needs.

In the second level of concerns in the Fuller model, prospective teachers reflect concerns about themselves as teachers. They are concerned about their ability to survive as teachers in a school situation, about such things as discipline, peer pressures, and approval from cooperating teachers and principals. While they notice and work with individual students in their experiences, they still concern themselves with the job, rather than the outcomes they as teachers have for students. Prospective teachers who have reached the second level of concerns are ready to assume a teaching assistant role in the classroom rather than a teacher aide role.

On campus, objectives were designed to promote more effective teaching; experiences focused on advanced teaching skills with more video-taping and feedback sessions. Socio-cultural modules sensitized students to the impact of cultural and physical environments on their school experiences. While the majority of objectives focused on the theory and use of instructional principles in the classroom, one module went beyond this. The Phenomenological Module focused on a consequence objective. In this module, the prospective teacher was expected to demonstrate increased self-concept of individual students as a result of interaction with the prospective teacher. This was the first of a number of subsequent objectives in the program.

Frederick McDonald writes that "The ultimate justification of any program is the evidence that its teachers can and do help children learn." The concern of a teacher for his impact on students is a Level III concern and typically is not achieved in initial phases of preparation. In designing this program, a basic premise was that this third level of concern—for impact on students—was our goal for all prospective teachers, and that activities would reflect student growth in this direction.

In the latter portion of the program prior to internship, prospective teachers translated generic skills and achievements into

specific objectives related to their major area of teaching. Secondary education majors examined materials, resources, programs, and instructional procedures for their major teaching field. Elementary education students explored areas related to teaching elementary pupils--reading, mathematics, social studies, language arts, and science. Options permitted some individualization as students concentrated on one or more academic fields. The tutoring experiences in mathematics, previously described, illustrate how by working with one learner, the prospective teacher is drawn toward a concern for him and movement toward impact concerns.

One point of contention between CBTE proponents and opponents is whether or not it is possible to look at the teaching act and focus on specific teacher skills. Opponents argue that the gestalt of the teaching act is the important thing; fragmenting the teaching act into small incremental parts destroys the art of teaching. Proponents recognize this danger but argue that it is only through this view of the teaching act as being made of smaller parts that prospective professionals can focus on their own personal growth. In most existing CBTE efforts students are expected to put it all together prior to certification and to continue growing during their careers.

In the Houston program, the last portion of the program was internship or student teaching. Successful demonstration of competencies was expected in this setting, just as earlier in his program he was expected to demonstrate these competencies in simulated, peer, and small-group situations. In addition, he was expected to bring about pre-determined changes in students. The prospective teacher was held accountable for both affective and cognitive changes. Successful completion of internship and a recommendation for certification depended on his students' performances and attitudes and his personal gestalt.

In Conclusion

Will we continue the program? Definitely yes! The long hours and frustrating experiences with materials inadequacies, equipment breakdowns, inadequate assistance, frustrated staff, and questioning colleagues are put in positive perspective by the

potential of an evolving and more effective teacher preparation program. That is our commitment. This fall the program is being expanded to include 1800 students. Next spring it will accommodate the entire undergraduate education student body, 2500 potential teachers.

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